

CLAIMS

1. An image forming apparatus comprising:

a first laser scanner unit for emitting a first laser beam and a second laser beam, which has a first  
5 laser source for generating the first laser beam, a second laser source for generating the second laser beam, and a first rotary mirror for deflecting the first laser beam and the second laser beam generated from the first laser source and the second laser  
10 source;

a second laser scanner unit for emitting a third laser beam and a fourth laser beam, which has a third laser source for generating the third laser beam, a fourth laser source for generating the fourth  
15 laser beam, and a second rotary mirror for deflecting the third laser beam and the fourth laser beam generated from the third laser source and the fourth laser source;

a first photosensitive member irradiated with  
20 the first laser beam;

a second photosensitive member irradiated with the second laser beam;

a third photosensitive member irradiated with the third laser beam; and

25 a fourth photosensitive member irradiated with the fourth laser beam, characterized in that:

an optical path configuration for the third

laser beam from the third laser source to the third photosensitive member is substantially the same as an optical path configuration for the first laser beam from the first laser source to the first

5 photosensitive member;

an optical path configuration for the fourth laser beam from the fourth laser source to the fourth photosensitive member is substantially the same as an optical path configuration for the fourth laser beam  
10 from the second laser source to the second photosensitive member; and

a second virtual line connecting a rotation center of the third photosensitive member and a rotation center of the fourth photosensitive member  
15 is inclined with respect to a first virtual line connecting a rotation center of the first photosensitive member and a rotation center of the second photosensitive member, and an angle made by a rotation axis of the second rotary mirror and the  
20 second virtual line being the same as an angle made by a rotation axis of the first rotary mirror and the first virtual line.

2. An image forming apparatus according to Claim 1, characterized in that an angle made by the  
25 first laser beam emitted from the first laser scanner unit and the third laser beam emitted from the second laser scanner unit and an angle made by the second

laser beam emitted from the first laser scanner unit and the fourth laser beam emitted from the second laser scanner unit are both equal to the angle made by the first virtual line and the second virtual line.

5           3. An image forming apparatus according to Claim 1, characterized in that a distance from the second photosensitive member to a position of the first laser scanner unit from which the second laser beam is emitted is equal to a distance from the  
10 fourth photosensitive member to a position of the second laser scanner unit from which the fourth laser beam is emitted.

          4. An image forming apparatus according to Claim 1, characterized in that the first laser  
15 scanner unit has a first optical box supporting the first laser source, the second laser source and the first rotary mirror, and the second laser scanner unit has a second optical box supporting the third laser source, the fourth laser source and the second  
20 rotary mirror.

          5. An image forming apparatus according to Claim 4, characterized in that both the first optical box and the second optical box are resin moldings produced by using the same mold.

25           6. An image forming apparatus according to Claim 4, further comprising a first supporting member for positioning and supporting the first optical box,

and a second supporting member for positioning and supporting the second optical box,

characterized in that the second supporting member is inclined with respect to the first

5 supporting member so that the angle made by the rotation axis of the first rotary mirror and the first virtual line is equal to the angle made by the rotation axis of the second rotary mirror and the second virtual line.

10 7. An image forming apparatus according to Claim 4, further comprising a supporting member for positioning and supporting the first optical box and the second optical box,

characterized in that the supporting member  
15 includes two positioning portions making an angle so that the angle made by the rotation axis of the first rotary mirror and the first virtual line is equal to the angle made by the rotation axis of the second rotary mirror and the second virtual line.

20 8. An image forming apparatus according to Claim 4, characterized in that an angle made by the first optical box and the second optical box is equal to an angle made by the first virtual line and the second virtual line.

25 9. An image forming apparatus according to Claim 1, characterized in that the optical path configurations for all the first laser beam through

the fourth laser beam are substantially the same.

10. An image forming apparatus according to Claim 1, characterized in that all the four optical systems forming the optical paths for the first  
5 through fourth laser beams use optical elements that are substantially the same optically.

11. An image forming apparatus according to Claim 1, characterized in that the rotation centers of the first photosensitive member through the third  
10 photosensitive member are arranged in a straight line, and the rotation center of the fourth photosensitive member is deviated from the straight line.

12. An image forming apparatus comprising:  
a first laser scanner unit for emitting a first  
15 laser beam and a second laser beam, which has a first laser source for generating the first laser beam, a second laser source for generating the second laser beam, and a first rotary mirror for deflecting the first laser beam and the second laser beam generated  
20 from the first laser source and the second laser source;

a second laser scanner unit for emitting a third laser beam and the fourth laser beam, which has a third laser source for generating the third laser  
25 beam, a fourth laser source for generating the fourth laser beam, and a second rotary mirror for deflecting the third laser beam and the fourth laser beam

generated from the third laser source and the fourth laser source;

a first photosensitive member irradiated with the first laser beam;

5 a second photosensitive member irradiated with the second laser beam;

a third photosensitive member irradiated with the third laser beam; and

a fourth photosensitive member irradiated with the fourth laser beam, characterized in that:

10 an optical path configuration for the third laser beam from the third laser source to the third photosensitive member is substantially the same as an optical path configuration for the second laser beam from the second laser source to the second photosensitive member;

an optical path configuration for the fourth laser beam from the fourth laser source to the fourth photosensitive member is substantially the same as an optical path configuration for the first laser beam from the first laser source to the first photosensitive member; and

20 a second virtual line connecting a rotation center of the third photosensitive member and the rotation center of the fourth photosensitive member is inclined with respect to a first virtual line connecting a rotation center of the first

photosensitive member and a rotation center of the second photosensitive member, and an angle made by a rotation axis of the second rotary mirror and the second virtual line being the same as an angle made  
5 by a rotation axis of the first rotary mirror and the first virtual line.

13. An image forming apparatus comprising:

a first laser scanner unit for emitting a first laser beam and a second laser beam, which has a first  
10 laser source for generating the first laser beam, a second laser source for generating the second laser beam, and a first rotary mirror for deflecting the first laser beam and the second laser beam generated from the first laser source and the second laser  
15 source;

a second laser scanner unit for emitting a third laser beam and a fourth laser beam, which has a third laser source for generating the third laser beam, a fourth laser source for generating the fourth  
20 laser beam, and a second rotary mirror for deflecting the third laser beam and the fourth laser beam generated from the third laser source and the fourth laser source;

a first photosensitive member irradiated with  
25 the first laser beam;

a second photosensitive member irradiated with the second laser beam;

a third photosensitive member irradiated with  
the third laser beam; and

a fourth photosensitive member irradiated with  
the fourth laser beam,

5        characterized in that an angle made by the  
first laser scanner unit and the second laser scanner  
unit is equal to an angle made by a first virtual  
line connecting a rotation center of the first  
photosensitive member and a rotation center of the  
10    second photosensitive member and a second virtual  
line connecting a rotation center of the third  
photosensitive member and a rotation center of the  
fourth photosensitive member.